Oil Fill Specifications and Requirements

WorldWide Helical Inline Speed Reducers

WARNING: Always check the unit for proper oil fill before operation. Failure to do so may result in unit failure and will void the unit warranty.

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WINL-OFS-010314

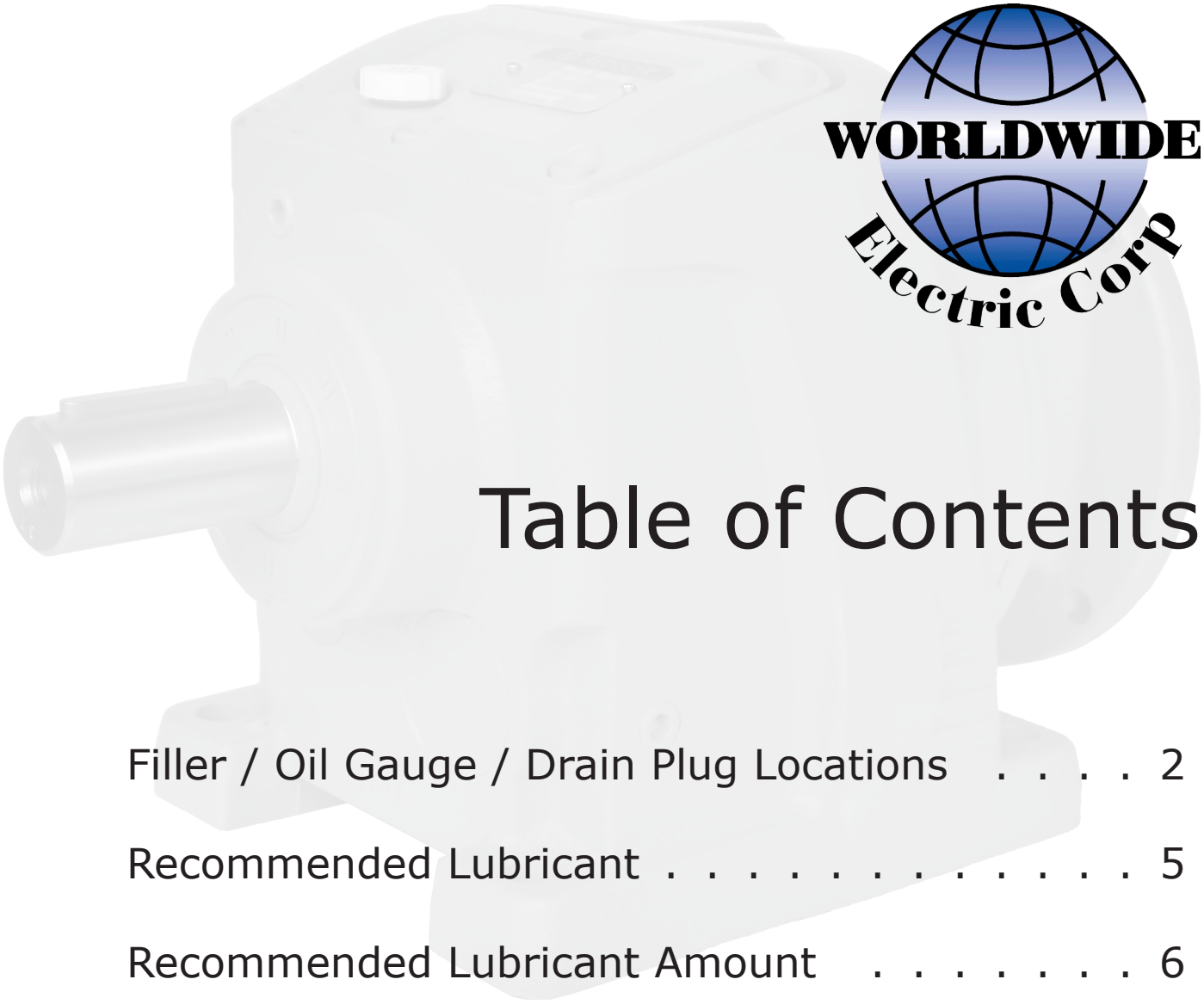


Table of Contents

Filler / Oil Gauge / Drain Plug Locations

Each inline reducer, regardless of the box size, comes with six (6) filler/oil gauge/ drain plugs. The six plugs are located in different locations depending on the actual box size selected. As an example of the fill/oil gauge/drain plug locations, please see Figures 1-5 below. Units are shipped from warehouse stock configured for an M1 mounting position (See Figure 6 - Foot Mounting Positions). Figure 6 - Foot Mounting Positions, shows the recommended location of the filler, oil gauge and drain plug locations for each different mounting position. If the mounting position is changed, the oil drain plug should always be placed in the lowest position after a new mounting position is selected.

When filling units for a new mounting position, the oil gauge plug will be located somewhere in the middle position of the unit as specified in Figure 6 – Foot Mounting Positions. The table shown under the heading "Recommended Lubricant by Box Size and Mounting Position" shows how much oil the customer should place in the unit when changing mounting positions or replacing the oil. The measuring unit for the oil filling amount is in liters.

To verify that the reducer has enough oil, the customer should remove the oil gauge plug while filling the oil. When the customer sees the oil coming out of the oil gauge plug, then they can stop filling the oil and replace the oil fill plug and the fill plug. The reducer now has enough oil inside.

When changing the oil, it may not be possible to remove all of the existing oil without disconnecting and lifting the unit. If lifting the unit is possible, simply lift the unit with proper lifting equipment, lower the drain plug by tilting the unit sideways, and gently shake the unit until all of the existing oil is removed.

The white cap shown in Figure 3 is a breather plug located in the top of the reducer as shown in this M1 mounting position. If the reducer is used in another position, this breather plug will need to be moved to the top fill position after the new mounting is completed. The breather plug must always be in the top most position on the unit.

Please note: The breather plug and oil fill plug share the same location and are always in the top most position. When the customer needs to fill in the oil, they remove the breather plug and fill the oil. After the oil is filled, they re-install the breather plug.

Filler / Oil Gauge / Drain Plug Locations

Figure 1

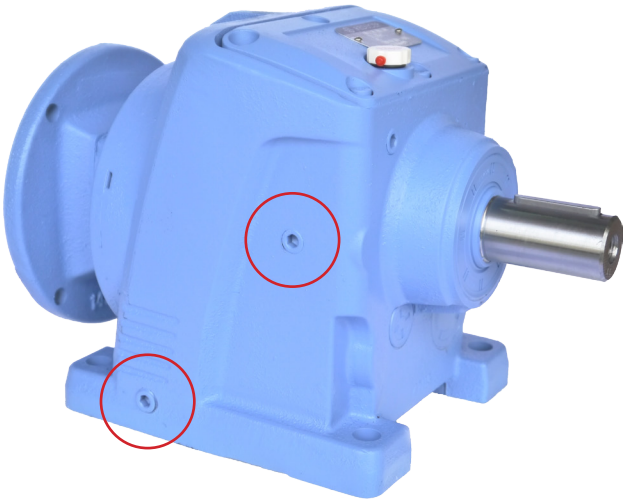
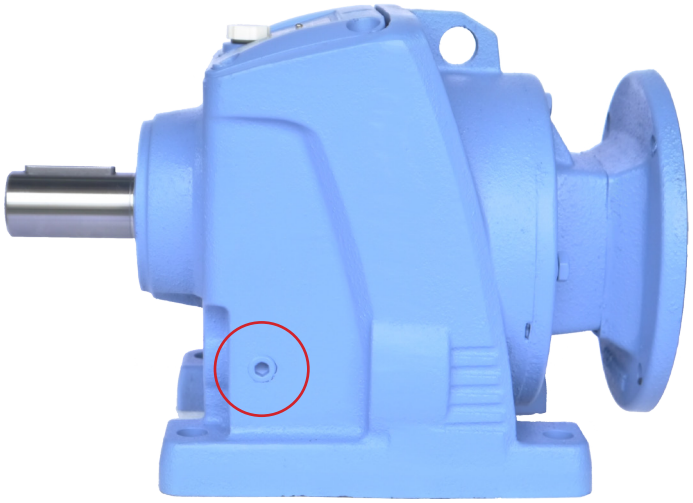


Figure 2

Figure 3

Figure 4



Filler / Oil Gauge / Drain Plug Locations

Figure 5

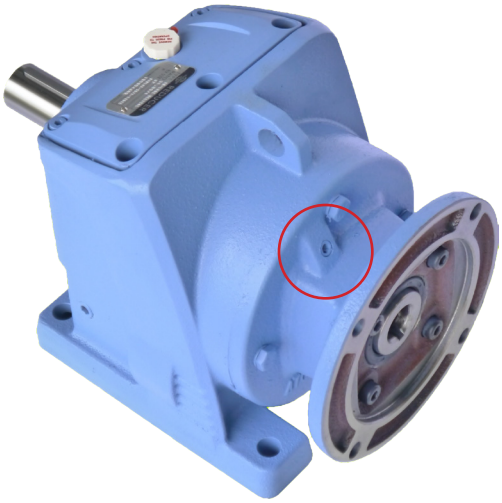
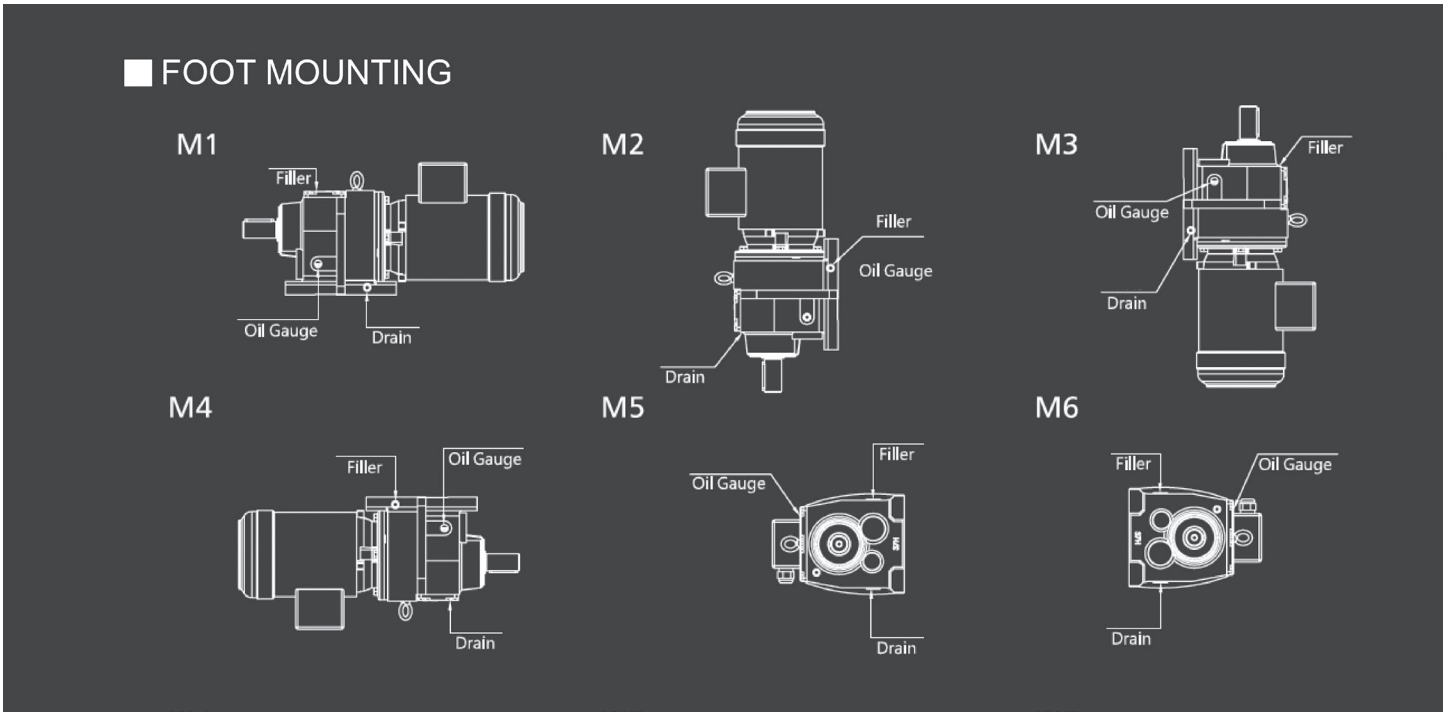


Figure 6 - Foot Mounting Positions



Recommended Lubricant
(CPC E.P. Lubricant HD)

- CPC E.P. Lubricants HD are made of the highly refined base oils and special additives, including EP(extreme pressure) additives, anti-oxidation, anti-rust, anti-foamer, etc., with very good metal surface adhesion. These oils also contain sulfur-phosphorus EP additive to form tenacious oil film on metal surfaces that can endure high E.P. and vibration load to prevent gear surface over-heat and serious wear. These oils pass FZG gear test (DIN 51354) with pass load stage 12+.

- These oils possess very excellent oxidative stability, and thus can effective prevent gum formation and oil degradation for extended service. These oils are suitable for lubrication of heavily loaded bearings and gears.

- Packages:
  1. In bulk (only for HD320, HD460 and HD680)
  2. 200 liter drum
  3. 19 liter pail (only for HD150, HD220, HD320 and HD460)

- The typical data are listed as follow:

Grade No.	HD32	HD68	HD100	HD150	HD220	HD320	HD460	HD680
Gravity, API, 15.6°C	30.4	28.5	27.8	27.1	26.5	25.9	25.3	24.4
Viscosity, Kin., cSt @ 40°C	31.15	67.2	98.1	143.6	212.2	310.5	440.4	656.2
Viscosity, Kin., cSt @ 100°C	5.26	8.62	11.16	14.38	18.59	23.70	29.80	38.68
Viscosity Index	99	99	99	98	97	96	96	96
Pour Point, °C	-18	-18	-18	-18	-18	-18	-18	-12
Flash Point, COC, °C	224	240	256	264	278	290	310	316
Color, D1500	L3.0	3.0	L4.0	4.0	L4.5	4.5	4.5	L5.0
TAN, mgKOH/g	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Timken EP, OK Load, Lbs	65	65	65	65	65	65	65	70
Carbon Residue, Rams., %	0.25	0.27	0.34	0.40	0.45	0.51	0.56	0.64
Sulfated Ash, %	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Product No.	LA82032	LA82068	LA82100	LA82150	LA82220	LA82320	LA82460	LA82680

Recommended Lubricant Amount
(by Box Size and Mounting Position)

Lubricant (unit: liter)										
Mounting Position	**17**	**37**	**47**	**67**	**77**	**87**	**97**	**107**	**137**	**147**
M1	0.24	0.30	0.70	1.10	1.20	2.30	4.60	6.00	10.00	15.40
M2	0.60	1.05	1.65	3.50	4.10	7.70	13.40	19.20	31.50	52.00
M3	0.60	0.85	1.60	1.60	3.80	6.70	11.70	16.30	28.00	46.50
M4	0.35	0.95	1.50	2.80	3.60	7.20	11.70	16.90	29.50	48.00
M5	0.35	0.95	1.50	2.00	3.40	6.50	11.70	15.90	25.00	41.00
M6	0.35	0.75	1.50	1.80	2.50	6.30	11.30	13.20	25.00	39.50

NOTE: The oil fill volumes shown are approximate values and cannot be used to correctly set the reducer oil level – **ALWAYS** fill the reducer to the correct oil level plug and recheck after one (1) week of use.